

The Phosphorous and Matchstick Handbook

Matteo Terzaghi

Italian



In a masterful assembly of essays, fables, encyclopaedia entries and autobiographical stories, Matteo Terzaghi has produced a book that contemplates life and our attempts to give meaning to our time on Earth.

"After lying idle for years in the darkness of a box, the match—or the 'lightning', as you will still hear it called in Piedmont—must now release all its energy. This is its moment. As fleeting as the flame may be—and fleeting it really is—something will have been accomplished."

Title

Il manuale del fosforo e dei fiammiferi

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Matteo Terzaghi was born in Bellinzona, canton Ticino, in 1970. His two previous works of prose, *Light Show Office* and *The Earth and its Satellite*, both blend fiction and non-fiction. Published by Quodlibet in their original Italian, they have been translated into several languages. Terzaghi has also published a series of collaborations with artists and photographers, including *Gotthard Super Express* (Humboldt Books, 2015) and *Thoughts and Fantasies About a Markus Raetz Landscape* (Edizioni Periferia, 2021). For *The Phosphorous and Matchstick Handbook* (Quodlibet, 2024), he received a special mention from the Martin Bodmer Foundation at the Gottfried Keller Prize 2024.

Awards

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The Phosphorous and Matchstick Handbook

Matteo Terzaghi

Excerpt translated by Ruth Clarke

I would like to tell you about a book that enabled me to answer a question that had been lingering in the recesses of my mind for many years. At 10.5 x 15cm, it fits into the palm of your hand. Hard cover in waxed canvas with typography and heat-stamped Art Nouveau decorations. Thread-sewn binding. Rounded spine. Arabesque endpapers bearing the publisher's mark. Etchings made by industrial machines and complex technical tables executed to perfection. Separate quartos for the horizontal tables. A list of over one thousand other titles in the series is included as a coda to the volume, distinguished by the bluish paper on which it is printed. All of this makes *The Industry of Matches and Phosphorous*, written by the engineer C.A. Abetti, the fascinating editorial product that it is. The same is true of the other Hoepli manuals, even if they are now obsolete and, in some cases, rather verbose.

Browsing the titles in the series "established to popularise Science, Literature, Arts and Industry", it is impossible not to develop a sudden curiosity about the unusual subject matter: *Submarine Telegraph Cables, The Geologist in the Countryside and in the Laboratory, The Duelist's Manual, Telepathy, The Making of Mirrors, Popular Cottages and Economical Small Houses, Volcanism, The Collector of Small and Precious Objects, Theory of Shadows*, and so many more. All sorts of links emerge. One might wonder, for example, whether the development of telepathy might not have been an alternative to the onerous submarine caves; or whether, on the contrary, the latter were rendered necessary by the loss of once widespread telepathic capabilities.

What soon becomes apparent to anyone perusing Abetti's pages is the practical and quantitative importance of matches in industry and domestic economies, from their invention in the 19th Century until the event of electricity. Fireplaces, candles and oil lamps, stoves for heating and cooking, boilers of all kinds. In just a few decades, matches replaced the old fire lighting techniques (based on tinder that was more or less ready to ignite upon contact with sparks produced by direct friction between metals, stones or sticks made from hard wood) and gave rise to a major industrial sector. Nonetheless, it is understood that at the beginning of the 20th Century – the volume dates from 1909 – matches were still relatively precious goods and were used sparingly. It is safe to assume that production grew exponentially in the 1950s; and it was in the 1960s, I believe, that matchbooks began to be

used as advertising vehicles and therefore distributed for free. Twenty matches were now worth less than a moment's attention from a new type of man: the consumer.

It is notable that, from the 1970s, several generalist publishers released books illustrated with colour photographs showing games, small magic tricks and crafts one could do with matches. For example, the Italian edition of *Matches. Collections, Trivia and Games* by Anders Neumüller, published in 1984. Its cover shows the profile of a man with a Roman nose and thick eyebrows made by thirteen carefully arranged matches. The man has a pipe in his mouth, drawn on the paper below with the head of a used match. We can do the same thing ourselves, and if we brush a fingertip over the charcoal deposited on the paper, the pipe will light and begin to smoke. The lattice towers and other ambitious tabletop architecture suggested by these pastime manuals are a clear sign that, with the expansion of the product range and the parallel distribution of disposable lighters, the golden age of matches came to an end.

The personal dilemma I mentioned earlier, which was raised and resolved by Abetti's manual (compiled with the objective eye of an engineer), now requires us to take a step back to childhood, and don't ask me why everything always comes back to that.

Why is everything about childhood?

A brief theory. In the first ten, maximum fifteen, years of life, in other words the period we call childhood, we collect and accumulate vast quantities of questions. They are like matches upon more matches, matchboxes upon more matchboxes. Every new encounter, every new word, every new hue of emotion and feeling, every premonition, every new trick of perception or memory opens up new scenarios and brings with it a number of questions. Later in life, the majority of these questions will fade away, abandoned or forgotten, while another share will perhaps find some sort of answer. Having lain for years inside a dark box, the match – or the *lightening*, as one might still hear it called in Piedmont – is called upon to release all its energy. This is its moment. In the short time the flame lasts (and it really is very short!) something will be accomplished.

Once upon a time, there were children who tried and tried to light a match by striking it on the sole of their shoe, to no avail. This was a cowboy move they had seen in Westerns. They also tried it with their mothers' leather boots, but that didn't work either – not to mention that cowboys wearing those boots looked quite ridiculous. So, in order to successfully perform the action that they had put on such a pedestal, they cut out friction strips from

bags and boxes, which they called *rasps* (in Abetti's manual they are called *strikers*), and attached them to the bottom of their shoes with sticky tape and paper clips. But this, they knew, was cheating, a form of self-deception, and the satisfaction it produced soon turned into a mocking dissatisfaction, not least because, given the small surface area, the action of lighting the match cowboy style, could never be performed with the requisite ease. Then the children grew up, disappeared into the sunset, and never gave it another thought.

For my part, I can say that only now, after reading the Hoepli manual, have I understood that the matches used in the Wild West were an entirely different kind to the ones available to us. I found it truly illuminating: a flash of lightening, a flare! It wasn't the men who were made of different stuff, as we'd come to believe, but rather the matches.

In his book, Abetti explains the difference between white phosphorus matches, produced from 1832, and red phosphorus matches, invented in Sweden ten years later and henceforth distributed around the world. The former, he writes, "ignite very easily; one need only rub the treated end of the match against any rough surface - wood, stone, fabric, shoe sole - for it to ignite". The second are composed of two elements: the match itself with a layer of "amorphous phosphorus mixed with gelatine, and a rough covering applied over part of the box", that is to say, a *striker*. Only after gasping as I read the words "shoe sole", did I understand why we could never make that motion work.

Today, Hoepli's early 20th Century manuals are collectors' items, but forty years ago, they were still selling for peanuts on bookstalls. They were too old to be considered useful but not yet old enough to be appreciated as antiques. If we had only come across this note in Abetti's manual, instead of wasting our time with "Swedish matches" we would probably have tried to make our own cowboy matches. That's the great thing about the Hoepli manuals: they invite you to put them into practice, to do something. Abetti provides the recipes for several chemical mixtures, with the percentages of phosphorus, rubber, saltpetre, etc. and explains how to set up a factory capable of ensuring their industrial production, from the unit responsible for cutting the wooden sticks (starting from tree trunks "complete with bark") to the unit for printing, folding and filling the boxes.

However, while it has been proven that in the right doses phosphorous is good for the brain, the drawbacks of white phosphorous matches are too significant to overlook, and before getting to work (and here I address any of my fellow cowboys who

might still want to grant themselves, a lifetime later, the satisfaction of lighting a match on the sole of their shoe), it would be best to note the following:

- 1) "The illnesses that can be contracted due to phosphorous include bronchitis, colic and stomach ache, and workers are particularly susceptible to these if employed in the mixing process, the dismantling of presses, or the placing of matches into boxes and packaging. Workers are also susceptible to a horrible disease, known as phosphorous necrosis, which consists of varying degrees of deterioration to the bones in the jaw. Infected people often die, and those who survive remain permanently affected by deformity and chronic illnesses."
- 2) "Phosphorous in matches (and this is understood to mean white phosphorous) may constitute a terrible weapon in the hands of an assassin, or a fanatic who may use it against himself, there is no antidote for phosphorous poisoning and it is very difficult for a chemist to discover the poisoning."
- 3) "The mixture for phosphorous matches contains the most combustible element and the comburent par excellence, making them highly dangerous due to the great ease with which they can ignite. The preparation of the mixture is also dangerous, as any imprudence on the part of a worker may cause a violent explosion in a reasonable amount of mixture. Boxes full of matches catch fire easily, causing injuries."

Ah, the boxes. In the glow of childhood, even the boxes had their charm. Of course it did not lie in the photographs or coats of arms displayed on the main sides, but in the combination of the sliding mechanism with which they opened, and their small, pocket-sized stature, suggesting the idea of a secret box, perfect for storing relics, talismans, miscellaneous souvenirs and memorabilia, spare parts and forbidden things. Milk teeth, withered flower petals, shells, shards of glass so smooth they look like precious stones, staples and other ammunition, crickets, caterpillars and butterflies, dried earthworms, buttons, chalk, feathers and tufts of animal fur, dog biscuits, monkeys carved from peach pits, decommissioned coins, yellow blackbird beaks, spiral pencil shavings, pins, microchips, cigarette butts, bolts and washers, passport photos, micrograms folded several times, fishing line and

hooks... A small but infinitely capacious space that could hold the physical remnants of our daydreams.

One last note on the subject of matches: a paradox I am only noticing now, as I write these pages. The invention of matches in fact put out a great many fires, because matches took away need to keep embers in the hearth to ensure that a flame could be drawn from them at any time. Fire has lost its place in our daily lives, and what put it out was the knowledge that it could now be lit on demand, with the greatest of ease.